REMARKS

Claims 5-8, 12-19 and 23-24 have been cancelled.

Claim 1 has been amended to specify the control spot comprise either IgE or a reagent that selectively binds IgE. Newly submitted Claims 28 and 29, which depend from Claim 1, specify the IgE- binding reagent is an anti-IgE immunoglobulin or an IgE receptor . Support for the language of these claims can be found in the specification, for example, on page 5, lines 12-16.

Claim 10 has been amended to specify the IgE be from a dog, cat, horse or human. Similar language appears in newly submitted Claims 25-27. Support for such language can be found in the specification, for example, on page 7, lines 5-24. Accordingly, Applicants submit no new matter has been entered into the Application.

I. Group Election

In a telephone conversation with the Examiner on January 28, 2004, election was made with traverse to prosecute the invention of Group I, Claims 1-11 and 20-22. Applicants hereby confirm this election.

II. Information Disclosure Statement

The Examiner has stated the information disclosure statement filed on December 9, 2002, fails to comply with 37 CFR §1.98(a)(3) because it lacks a concise explanation of the relevance of each patent listed that is not in the English language.

The information disclosure statement filed December 9, 2002 contains two references, B1 and B2, that are not in the English language. Applicants submit the relevance of these references is as follows:

Reference B1

The invention disclosed in this reference relates to a strip test for diagnosing allergies and a method for detecting specific IgE in whole blood or in sera. The invention also relates to the use of the disclosed test for detecting a variety of allergens.

Reference B2

The invention disclosed in this reference relates to the use of two receptors, R1 and R2, in an immunoassay for detecting the presence of allergen-specific antibodies in bodily fluids. R1 is an allergen capable of specifically binding the antibody to be detected; R2 is a label-conjugated antibody directed against the Fc region of IgE or IgG.

Applicants do not have English translations of these references; however, Applicants have submitted with this Response English translations of the abstracts from references B1 and B2.

III. Claim Objections

The Examiner has objected to Claims 5-8, stating these claims are of improper dependent form for failing to limit the subject matter of a previous claim. Applicants believe Claims 5-8 limit the subject matter of Claim 1 from which they depend; however, in order to expedite prosecution of the instant application, Claims 5-8 have been canceled.

IV. Rejections Under 35 USC§112, second paragraph

The Examiner has rejected Claim 4 as being indefinite for failing to point out and claim the subject matter Applicants regard as their invention. Claim 4 recites the limitation that the mixture of allergens is deposited on an area of the porous membrane separate from the sample receiving area. The Examiner contends it is unclear from the claims and the specification how applicants would ensure contact of the sample with the mixture of allergens in order to allow the detection of IgE.

Applicants respectfully disagree with the Examiners contention that Claim 4 is indefinite. To begin with, the specification, for example on page 5, lines 9-26, through page 6, lines 1-16, clearly delineates the sample receiving area can be an area separate from that spotted with the mixture of allergens. This same section specifies the device can comprise an absorbent member having capillary pathways thereby inducing flow of liquids through the first member. In addition, the specification, for example page 6, lines 17-23, states the device can be in the format of a lateral flow device. Applicants contend one skilled in the art, reading these sections of the specification, would understand that a sample applied to a sample receiving area could be made

to contact a separate allergen-spotted area using, for example, an absorbent member or other, similar techniques found in lateral flow devices.

V. Rejections Under 35 USC §103 (a)

The Examiner has rejected Claims 1-4, 9-11, and 20-22 under 35 USC § 103 (a) as being unpatentable over Frank *et al.* (US 5,945,294) in view of Chu (US 5,541,059). The Examiner states Frank *et al.* teach a porous membrane, with a mixture of allergens (flea saliva proteins) for detecting IgE, and a control (purified IgE). The Examiner further states Frank *et al.* also teach a support member (absorbent member) in direct contact with the first member. The Examiner acknowledges Frank *et al.* fail to teach the mixture of allergens and the control are spotted on the porous membrane. The Examiner states Chu teaches a device comprising a first porous member having a sample receiving area, where the porous member is spotted with antigens and a control. The Examiner contends that in view of Chu, one skilled in the art would have been motivated to use the device of Frank et al, spotted with a mixture of allergens and control spots, as taught by Chu, to detect IgE. The Examiner therefore concludes it would have been obvious to spot the porous member with a mixture of allergens, as taught by Chu, in the device of Frank *et al.* to arrive at the instant invention. Applicants respectfully disagree with the Examiners conclusory statement and submit that not only is the combination of Chu and Frank *et al.* improper, but that even if such a combination were proper, all elements of the instant invention are not taught in the cited prior art references.

It is well-established that a showing of obviousness requires a teaching, suggestion or motivation to combine or modify prior art references. *Boehringer Ingelheim Vetmedica Inc. v. Schering-Plough Corp.*, 65 USPQ2d 1961 (Fed. Cir. 2003). Furthermore, it is equally well-established that all claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Additionally, for a case of obviousness to exist, the prior art must suggest the desirability of the claimed invention. The mere fact references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 16 USPQ2d 1430 (Fed. Cir. 1990). Additionally, as noted by the Board of Patent Appeals & Interferences in *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993), in order to establish a *prima facie* case of obviousness, "it is necessary for the Examiner to present *evidence*, preferably in the form of

some teaching, suggestion or incentive or inference in the applied prior art, or in the form of generally available knowledge, that one having ordinary skill in the art *would have been led* to combine the relevant teachings of the applied references in the proposed manner to arrive at the claimed invention" (emphasis in original). The court in *In re Fine*, 5 USPQ2d 1596, pg.1600, (CAFC) held a similar opinion, stating:

"Obviousness is tested by 'what the combined teachings of the references would have suggested to those of ordinary skill in the art.' *In re Kellar*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). But it cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination."

In the instant case, Chu teaches a device containing a porous membrane spotted with antigens to capture antigen-specific antibodies. Chu also teaches spotting the membrane with control spots. However, in contrast to the control spots of the instant invention, the control spots of Chu specifically contain non-antibody control substances (e.g. protein A; see column 1, lines 8-11). Chu does not discuss the use of antibody-containing control spots and in fact, Chu discourages the use of antibodies as controls. The Examiner is directed to Column 2, lines 41-48, where Applicants note Chu, in discussing issues of cost and sensitivity, clearly teaches away from the use of antibodies as controls, stating, "[a]nother drawback of using antibodies as controls is that their sensitivity can vary from lot to lot, thus they can require substantial quality control testing." The court in *In re Fine* noted that when a reference warns against rather than teaches an invention, one cannot be expected to combine it with another teaching; *In re Fine*, supra, pg. 1600.

In addition to comprising non-antibody components, the control spots taught by Chu are not specific for a particular class of immunoglobulin but instead bind all immunoglobulins. Chu is not interested in and does not discuss the desire or need to have control spots specific for a single class of antibody, in particular, IgE. The Examiner contends Frank *et al.* teach a control spot containing purified IgE. However, Applicants disagree with this contention and submit there is no discussion anywhere in Frank *et al.* regarding the use of a control spot. Frank *et al.* do discuss the use of purified IgE but not in control spots and in fact, not even as controls as the Examiners has suggested (see discussion below). Likewise, Frank *et al* do discuss the use of lateral flow devices for the detection of IgE; however, nowhere in this discussion is there any mention of having a control spot of any kind. In view of this, Applicants contend the Examiner

in the instant case has failed to present any evidence showing Chu or Frank *et al.* teach or suggest the instant combination of references to produce Applicants' invention.

Instead, Applicants believe the only suggestion for the Examiner's combination of teachings from the applied references stems from the Applicant's disclosure and not from the prior art. As such, Applicants submit the Examiner has relied on hindsight analysis, using the instant Application as a blueprint to reach a determination of obviousness. It has been clearly established that hindsight analysis is not the appropriate legal standard. As stated by the court in *In re Fine*, supra. "[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention."

Next, even if there were some teaching or suggestion in the prior art to combine the references, which Applicants strongly disagree, all the claim limitations must be taught or suggested by the prior art; *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). In the instant case, Applicants contend the cited prior art references do not contain all elements of the instant invention. As noted above, the Examiner states Chu teaches the use of control spots. The Examiner contends Frank *et al.* teach the use of a control spot containing purified canine IgE, citing Examples 8 and 9 of the instant invention as evidence. However, Applicants respectfully disagree with the Examiners conclusion regarding Frank *et al.* and note the cited Examples do not discuss the use of IgE-containing control spots; in fact they do not even discuss the use of IgE as a control to ensure the proper working of the ELISA assay. Examples 8 and 9 of Frank *et al.* disclose ELISA assays for the detection of canine IgE in a liquid sample. In these Examples, all wells of the ELISA plate were coated with either anti-canine IgE antibody or flea saliva; (see Column 20, lines 18-20, and lines 54-57). However, neither Example discloses the use of IgE as a control in the ELISA. While purified canine IgE is mentioned, such IgE was used to create an artificial positive sample(see the first lane in Figures 5 & 6; see also Column 20, lines 18-22); it was not used as an integral part of the ELISA assay to ensure the assay was working properly. In support of this position, Applicants direct the Examiners attention to Figure 6 of Example 9 in the Frank *et al.* reference. The first lane of this chart shows the results obtained when the purified canine-IgE spiked sample is tested in an ELISA using flea saliva as the capture reagent. Since the purified IgE is non-specific, very little to no IgE is captured by the flea saliva resulting in a very low signal. If the purified IgE had been meant to serve as a control for the ELISA, the IgE in the spiked sample would have been captured resulting in a much higher signal in these

wells. Applicants contend the IgE used in these Examples was not meant as a control for the performance of the ELISA, but was meant instead to represent the performance of a known positive sample in the ELISA. In the instant invention, IgE, spotted on the porous membrane, serves as a true control for the ELISA assay. Even in the absence of IgE in a sample, the membrane-spotted IgE will capture the detecting reagents yielding a signal that signifies the assay is working properly. Applicants contend Frank *et al.* fail to disclose the use of IgE as a control with which to measure the performance of an IgE-detecting assay.

Finally, even if Frank *et al.* did disclose the use of IgE as a control as asserted by the Examiner, then Chu's teaching away from using purified antibodies as controls (as discussed above) would lend additional support for Applicants' position that the references cannot be properly combined.

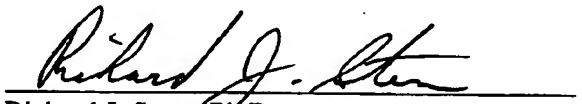
Accordingly, in view of the above, Applicants believe the Examiner has failed to establish a *prima facie* case of obviousness and hereby request withdrawal of the rejection under 103(a).

Conclusion

In view of the above arguments and amendments, Applicants request withdrawal of all rejections and solicit allowance of the pending claims. In the event the Examiner has any questions regarding this Application, the Examiner is invited to contact the undersigned representative at (970) 493-7272.

Respectfully submitted,

Dated: June 4, 2004

By: 

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